



“Get-able” Science Stories

Using Narrative to Communicate the Value of Science

Paul Propster, Story Architect, Innovation Foundry, Office of Formulation

In my first 2 years at JPL...

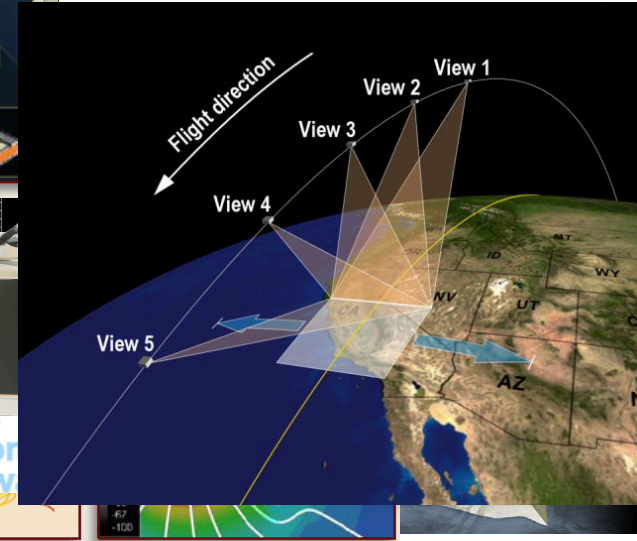


NEWS | MARCH 10, 2016

New NASA Instrument to Study Air Pollution



MAIA



Over the last 3 years...





JPL STRATEGIC IMPLEMENTATION PLAN 2018

***VISION:** Explore space in pursuit
of scientific discoveries that benefit
humanity*

QUESTS: Pursue a diverse and bold set of science missions

THRUSTS: Create the laboratory of the future

CAPABILITIES: Accelerate technology infusion

[› DOWNLOAD PDF](#)

You are Curious





You See Connections

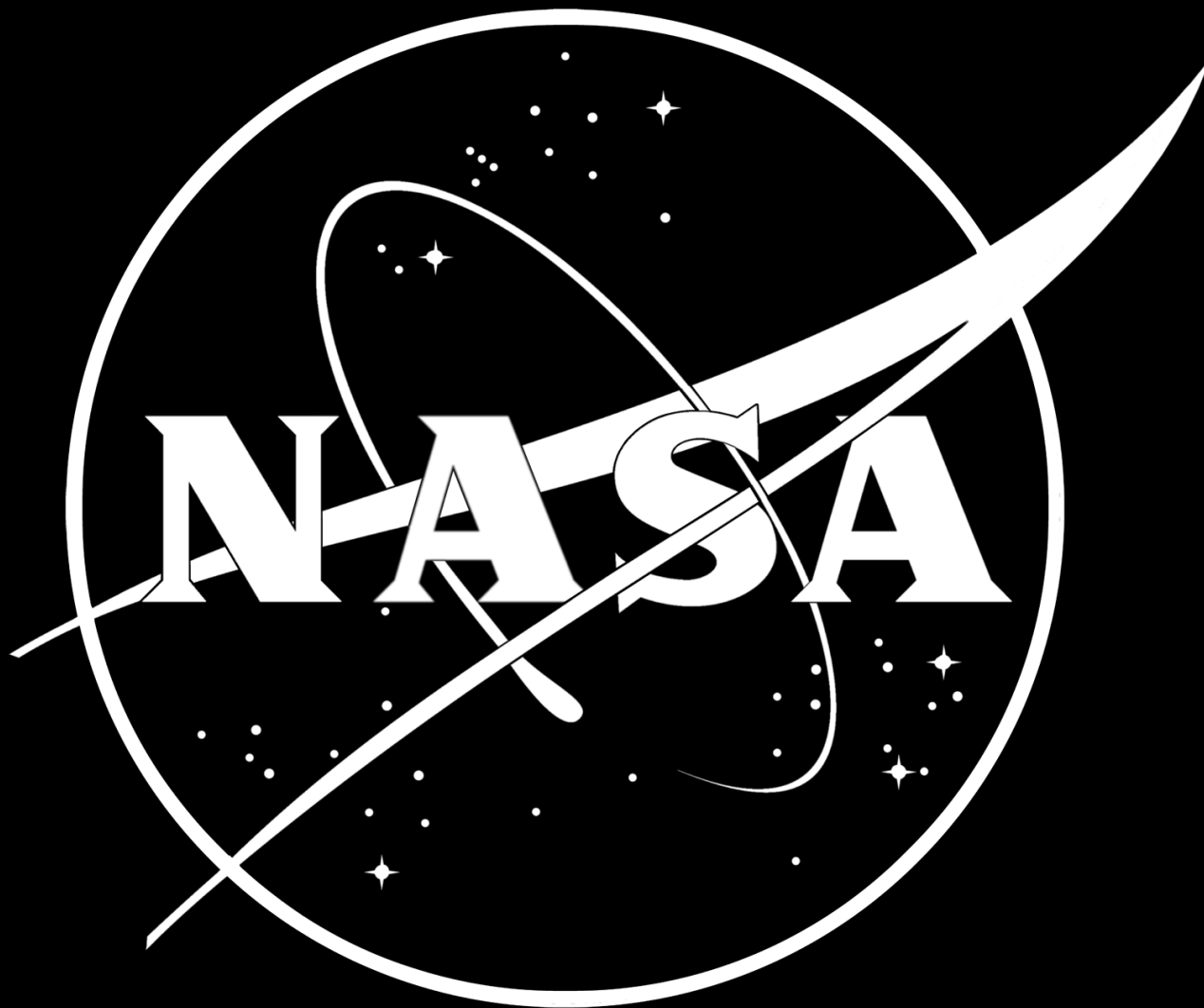
You are Drawn to New Ideas

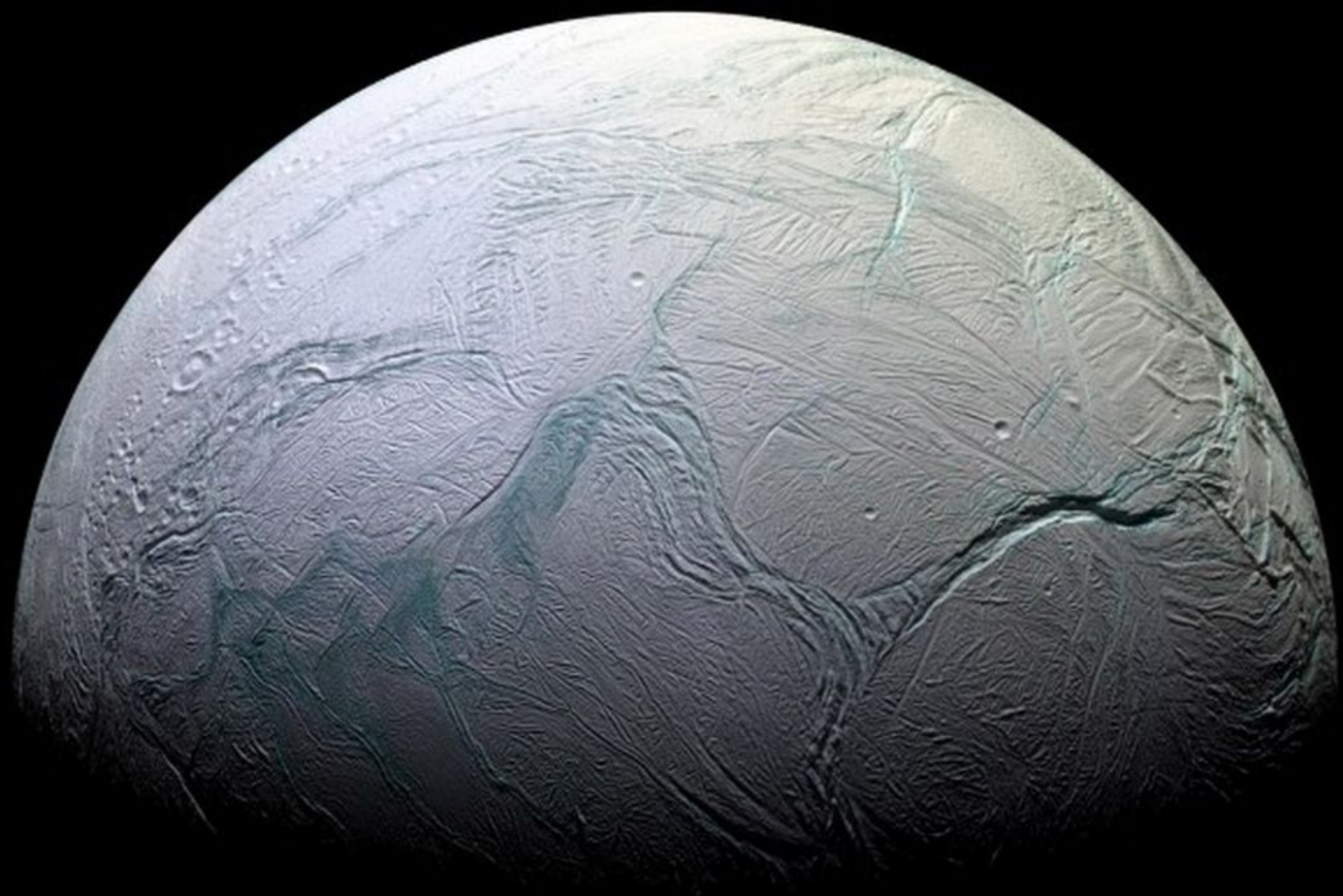


The background of the image is a dark, atmospheric landscape. In the foreground, the dark silhouette of a mountain slope rises from the bottom right corner towards the center. The sky above is filled with heavy, dark clouds, with a slightly lighter area in the center where the main text is located. The overall color palette is dark blues, greys, and blacks, creating a somber and mysterious mood.

THE TRUTH IS OUT THERE

You are a Conduit for the Truth







A deep-field astronomical image, likely from the Hubble Space Telescope, showing a vast field of galaxies and distant stars. The galaxies are scattered across the frame, appearing as small, distant points of light or faint, elongated structures. The colors range from bright yellow and orange to deep red and blue, indicating different temperatures and compositions. The background is a deep black, punctuated by the light of these celestial objects.

Universe of “What Ifs”



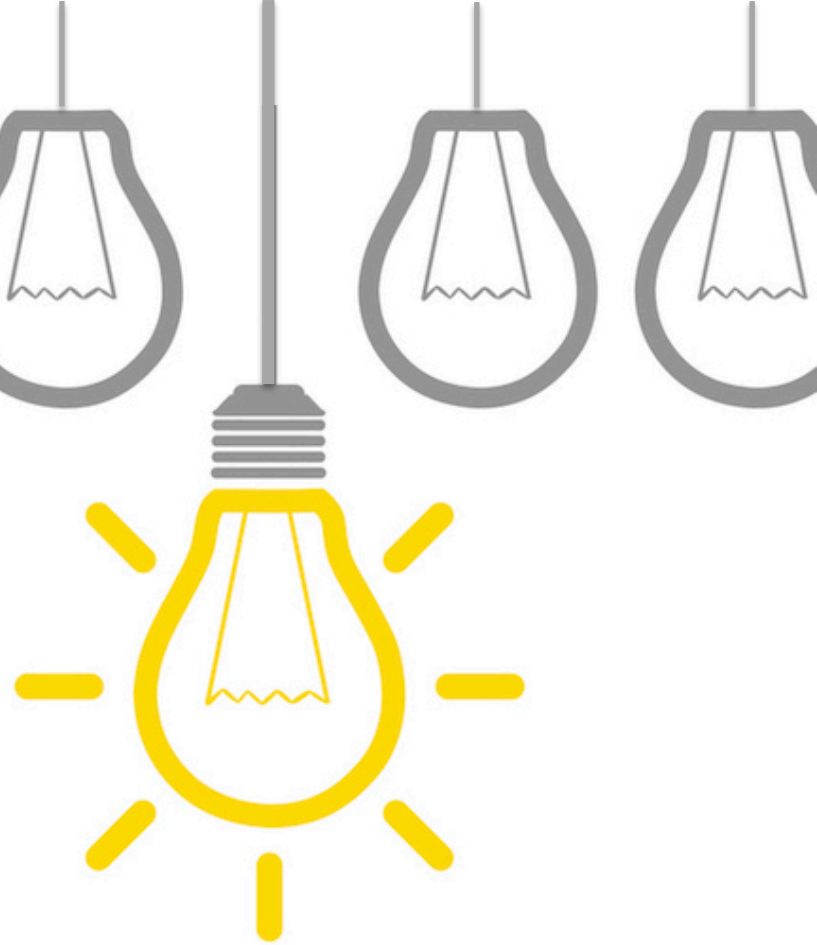
THIS

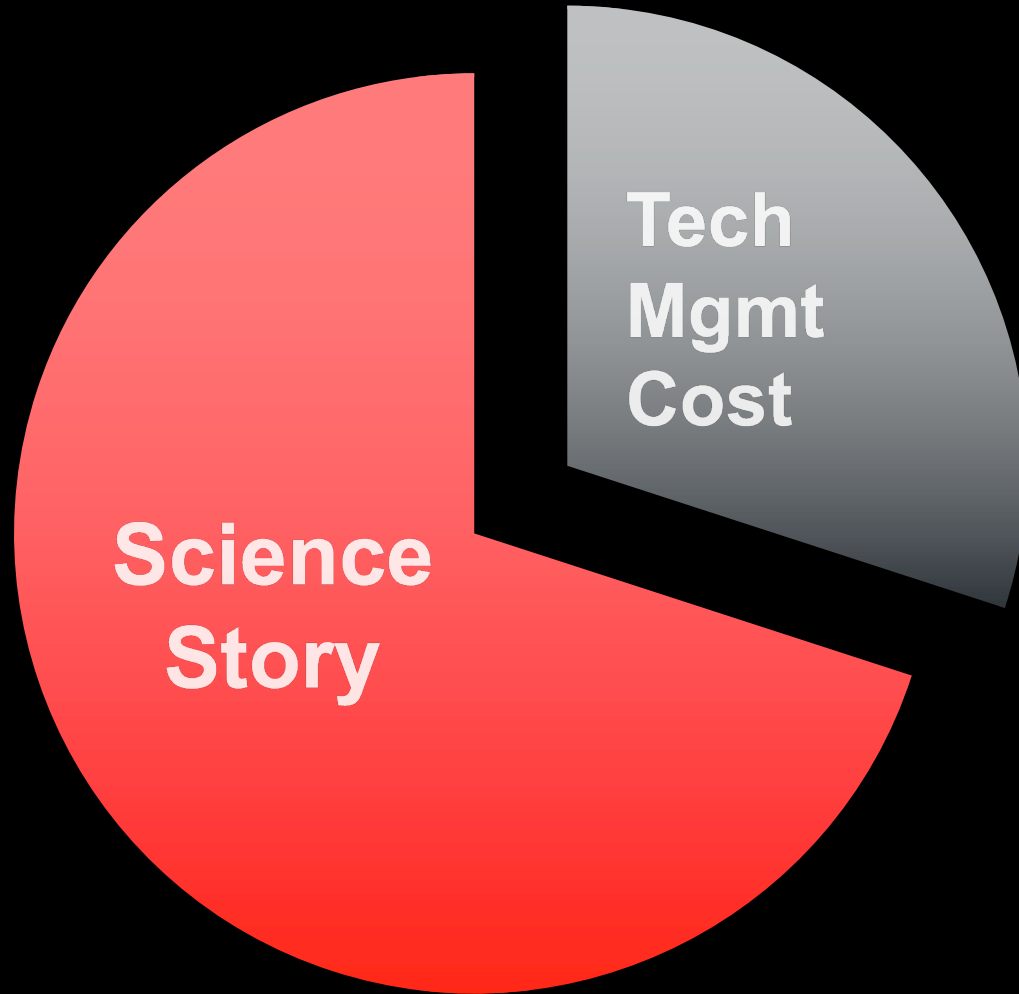
OR



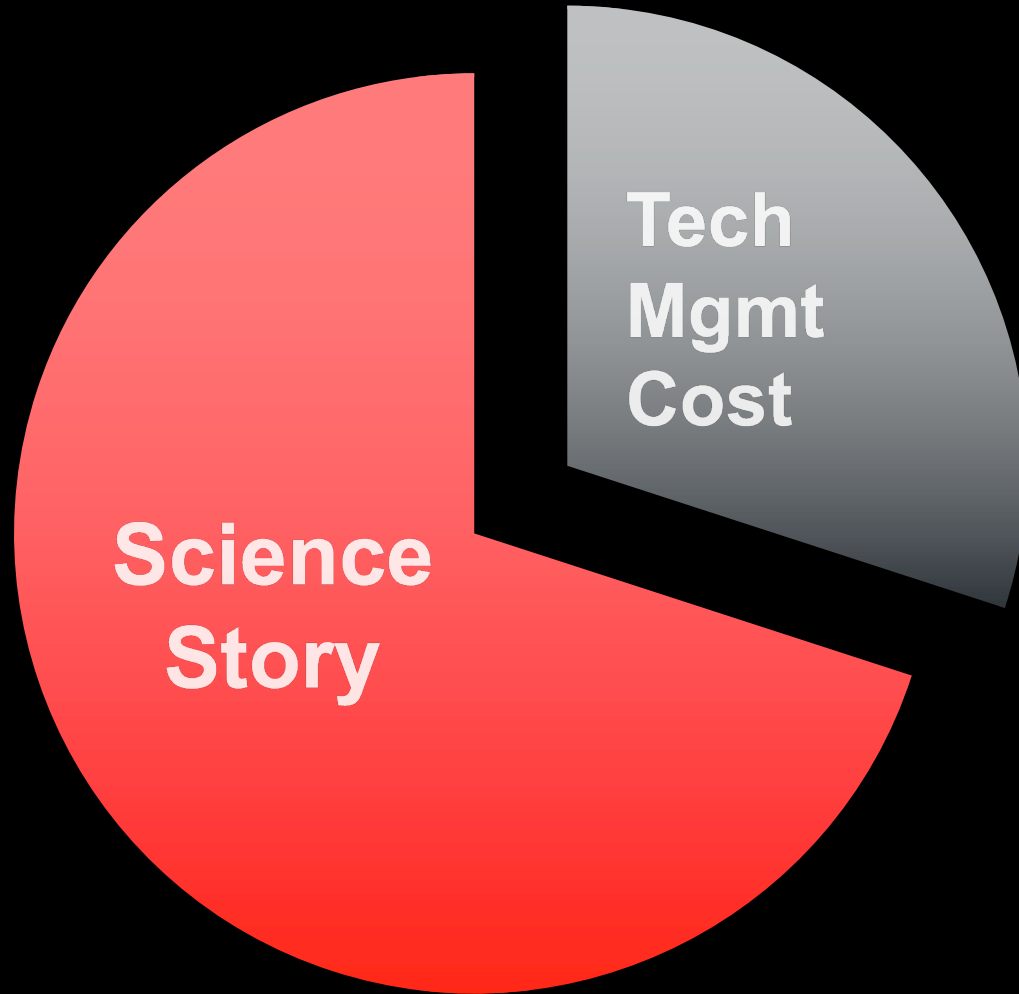
THAT

Competition of Ideas





Let's Try Something Together





ei

**emotional
investment**



ca

**critical
assessment**

A diagram consisting of two circles on a black background. The left circle is large and outlined in red, containing the text 'ei'. The right circle is smaller, also outlined in red, and contains the text 'ca'.

ei

ca



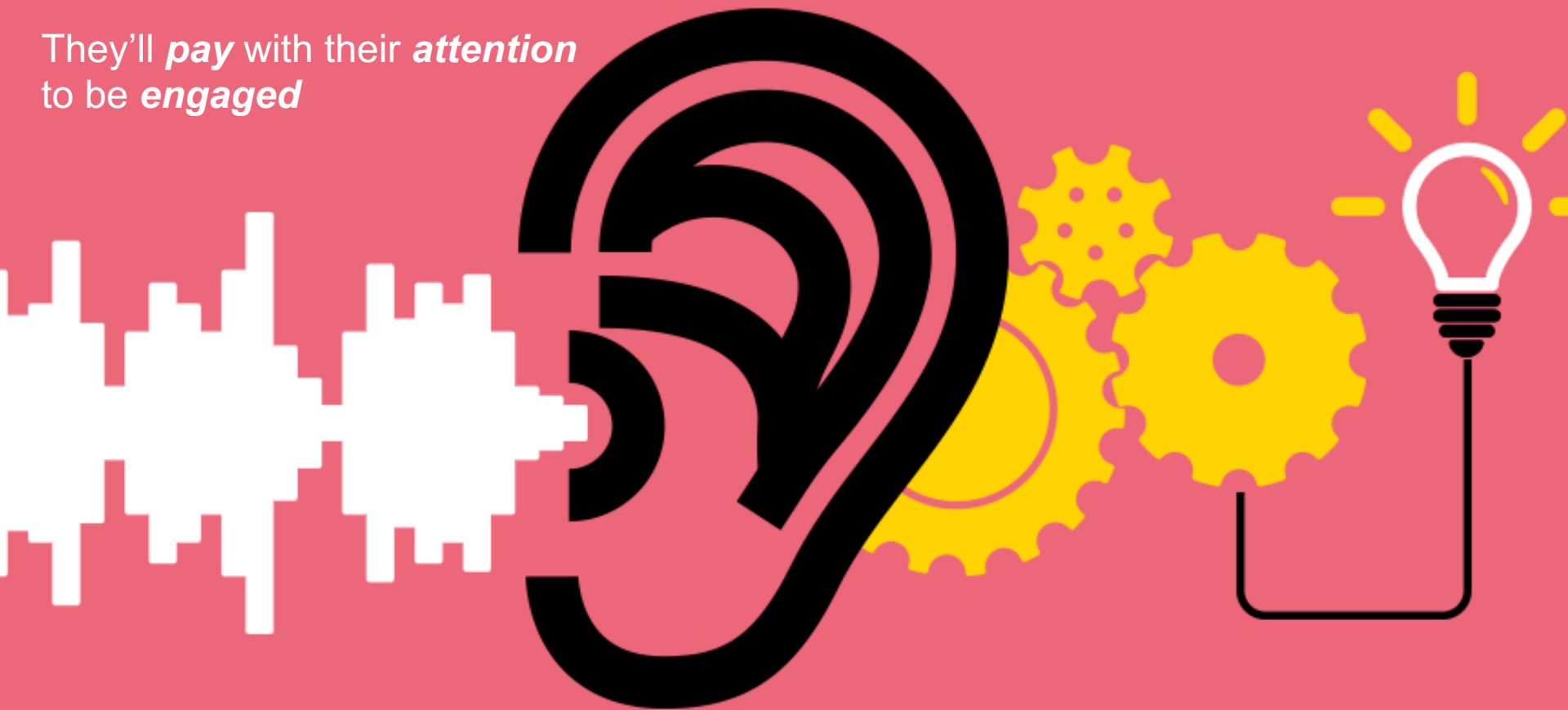
**Science
of Story**

**Thinking
Differently**

**Core
Story**

You want to *buy* their *attention* in order to deliver (*sell*) an *idea/concept*

They'll *pay* with their *attention*
to be *engaged*



Engagement is the gateway to *influence*

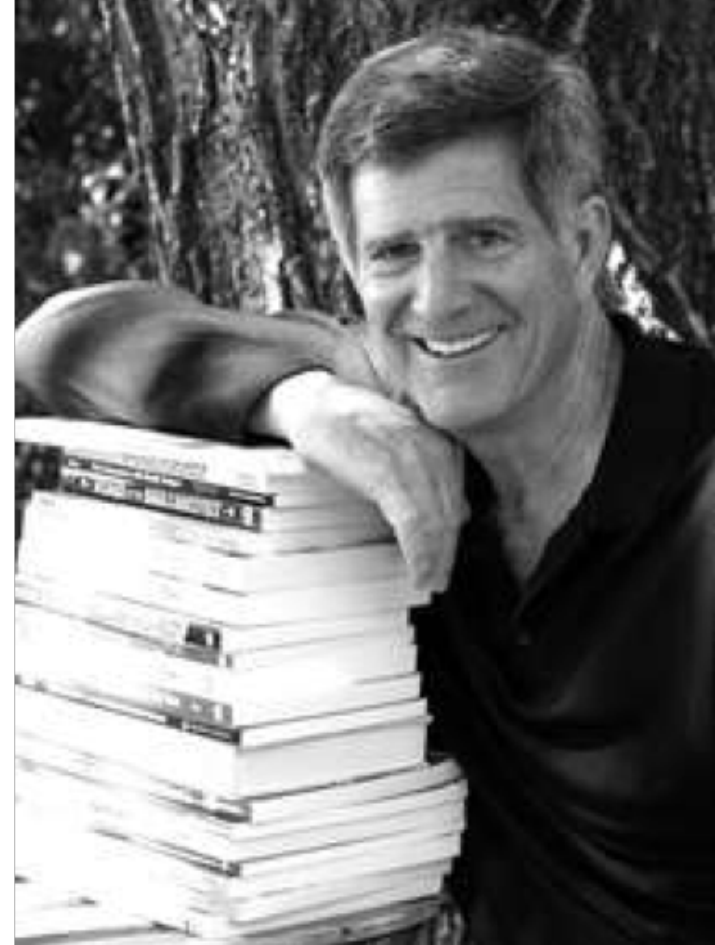


This is not the **CONTENT** you are looking for...

It's not, "Did I **say** what I wanted to say?"

It's, "Did they **hear** what I need for them to hear?"

1. How does the human brain make sense of incoming information & experience?
2. Once it makes sense, how does it then create meaning from that information?



Kendall Haven

Human brains are physically hardwired to ***make sense*** of incoming information and experience ***in specific story terms/elements***.



You turn incoming information into ***story*** before it reaches your conscious mind with your ***neural story net***.



He went to the store.

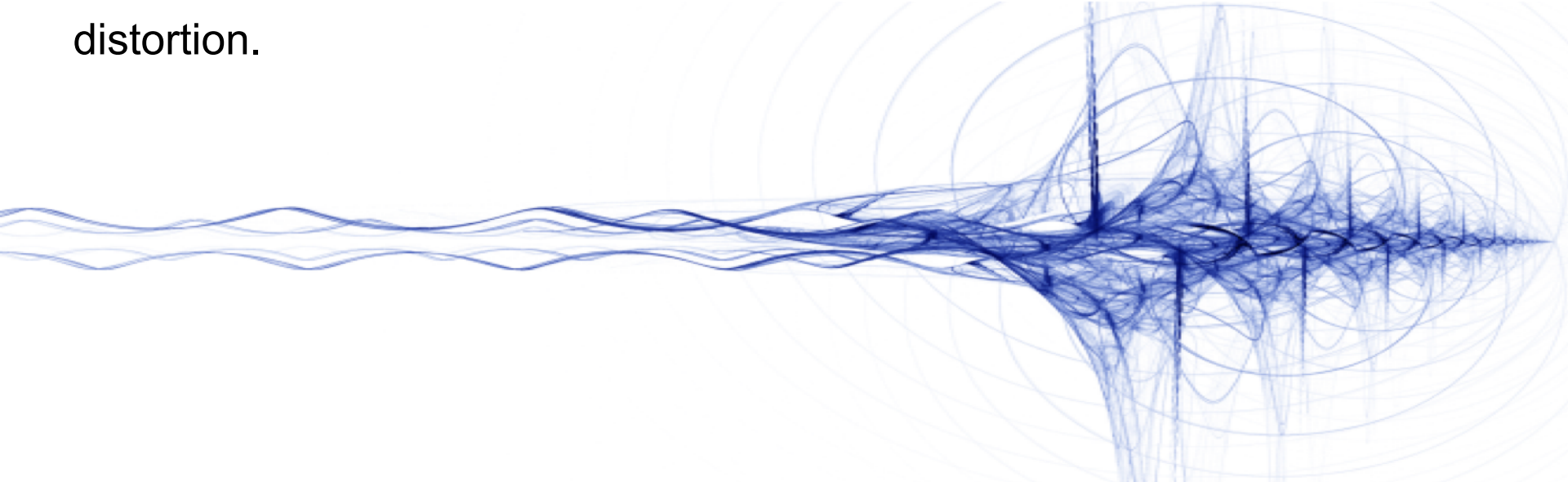
Fred died.

Sharon went hungry and wept.

Distorts incoming information in order to make it ***make sense***.

The story they see & hear ***IS NOT*** the story you said.

Applying ***effective story structure*** to your information ***minimizes*** distortion.



The brain relies on two sources of information:

- ***Banks of Prior Knowledge***
- ***The source material*** (your story)



So What

Now What

SO WHAT...

might be the pre-disposition of the selection official toward your concept?

NOW WHAT...

specific subject matter detail are you planning to satisfy/overcome their positions?

SO WHAT...

are your concept's death threats?

NOW WHAT...

are you going to do to overcome them?

SO WHAT...

do you know of the competition and the rest of the field in your subject matter?

NOW WHAT...

makes your offering better than that of your competition?



Science
of Story

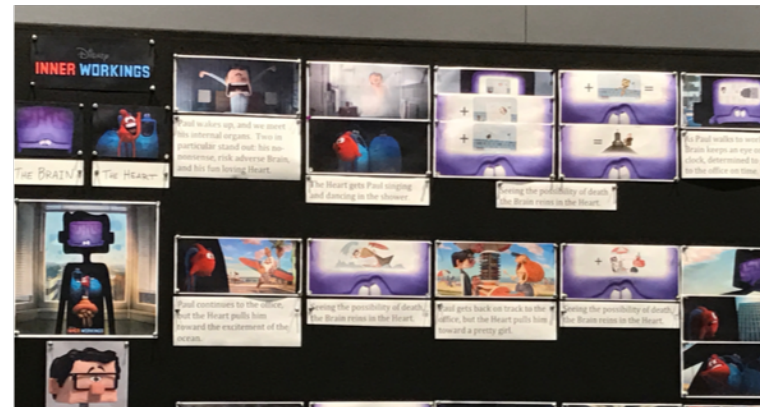
Thinking
Differently

Core
Story

ALDA-KAVLI LEARNING CENTER FOR
SCIENCE COMMUNICATION



DisneyTOON
STUDIOS

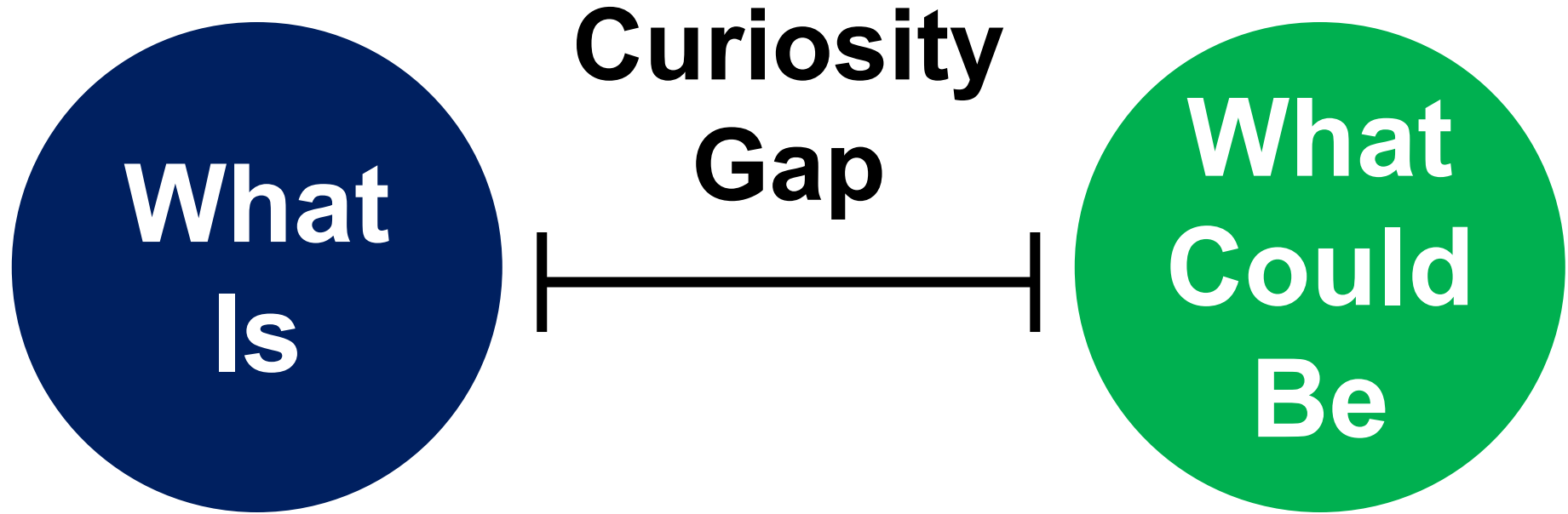




**What
Is**



**What
Could
Be**







The Curse of Knowledge...

this '**curse**' as the **cognitive bias** that makes it difficult for those who **know** the answer to a problem to think about the problem from the **perspective** of someone who doesn't



It's the bottom of the 9th inning at Yankee stadium.

The Yankees have the bases loaded with 2 outs and are down by 2 runs to their arch rival the Boston Red Sox.

Derek Jeter, the team's captain, is at the plate with a full count.

Please describe the situation to your partner and the potential excitement of Jeter getting a base hit.

"DON'T GIVE THEM 4, GIVE THEM $2+2$ "

— Pixar's Andrew Stanton, TED Talk on storytelling

I am studying *Didymosphenia geminata*, an invasive species known to impair the recreational and ecological values of waterways and native species.



I study ***rock snot***.

This is a kind of alga that forms brown, oozing masses that resemble a sewage spill.

They grow so large that they can block streams and kill fish.

Rock snot is an invasive species, meaning it comes from outside the region and harms the local balance of nature.

Its scientific name is *Didymosphenia geminata*.



Move from **simple** to complex, from **familiar** to unfamiliar.

Start with basics, and then “gently” introduce complexity.



The person communicating their idea is responsible for how well the other person follows them.



Science
of Story

Thinking
Differently

Core
Story

P X A R

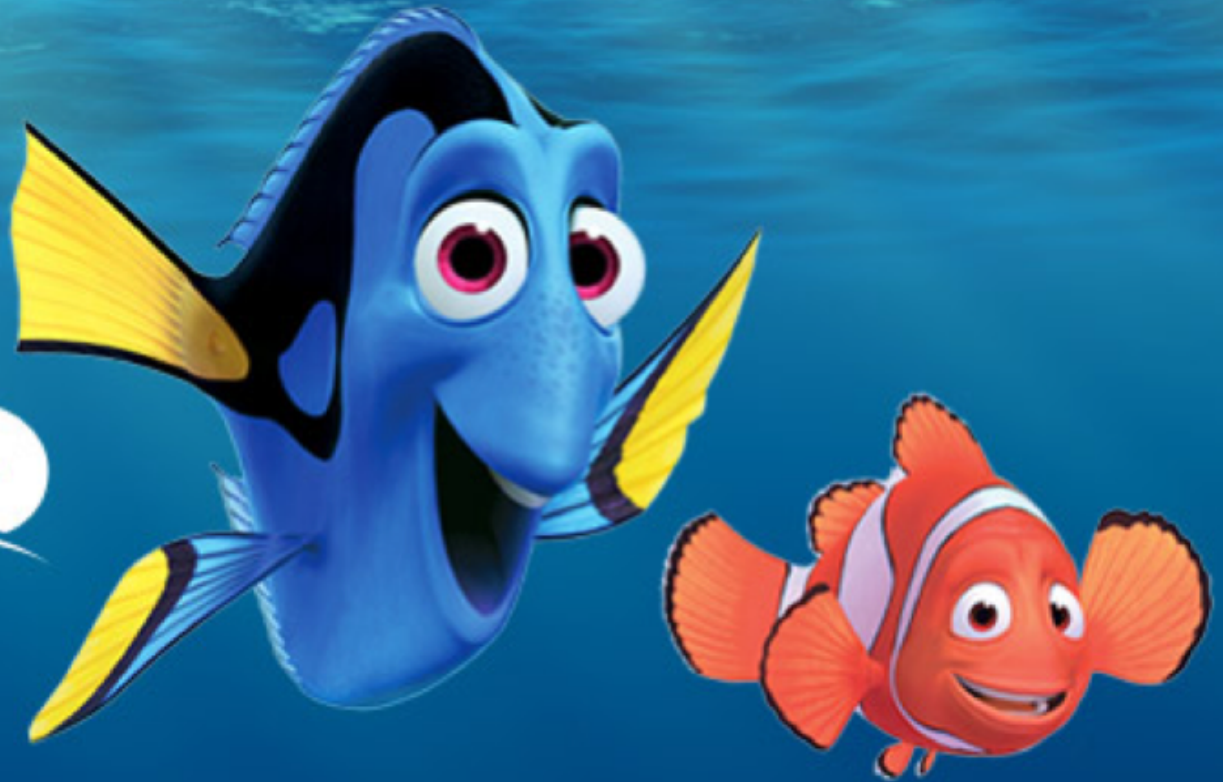
ANIMATION STUDIOS



*A deep structure of **storytelling** to help understand and begin to fill in this **curiosity gap**:*

1. Once upon a time there was ...
2. Every day ...
3. One day ...
4. Because of that ...
5. Because of that ...
6. Until finally ...

From the boardroom to the playground



Pixar story artist, Emma Coats

6. Until finally ... Marlin and Nemo find each other, reunite and learn that love depends on trust.

1. Once upon a time there was ...
2. Every day ...

Current State-of-the-Art

3. One day ...

Curiosity Gap

4. Because of that ...
5. Because of that ...

Advance the State-of-the-Art

6. Until finally ...

“New” knowledge

1. **Once upon a time** Earth's cryosphere
2. **Every day ...** this sea levels
3. **One day ...** many reflectance and inc **why**
4. **Because of that .** understanding by r
5. **Because of that .** of future changes t
6. **Until finally ...** this protecting and sus



ice melting in the

umes of water raising

decreased surface

understanding of

improve our

\$

to improve predictions

on that results in

1



2



3



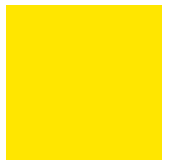
4



5



6



1

1. beta cells and
insulin present
in the islets of
Langerhans

Over time, there was
a decline in the number
of beta cells, leading to
a decrease in insulin
production.

Over time, there was
a decline in the number
of beta cells, leading to
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Over time, there was
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a decrease in insulin
production.

2

2. The internal
processes of the
cell are not directly
controlled by the
external environment.

Every day, the internal
processes of the cell are
not directly controlled
by the external environment.

Every day, the internal
processes of the cell are
not directly controlled
by the external environment.

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by the external environment.

Every day, the internal
processes of the cell are
not directly controlled
by the external environment.

3

3. A cell is a
self-contained
unit that can
perform all the
functions necessary
for life.

Over time, the cell
became more complex
and specialized, leading
to the development of
different cell types.

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became more complex
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4

4. The cell is a
self-contained
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for life.

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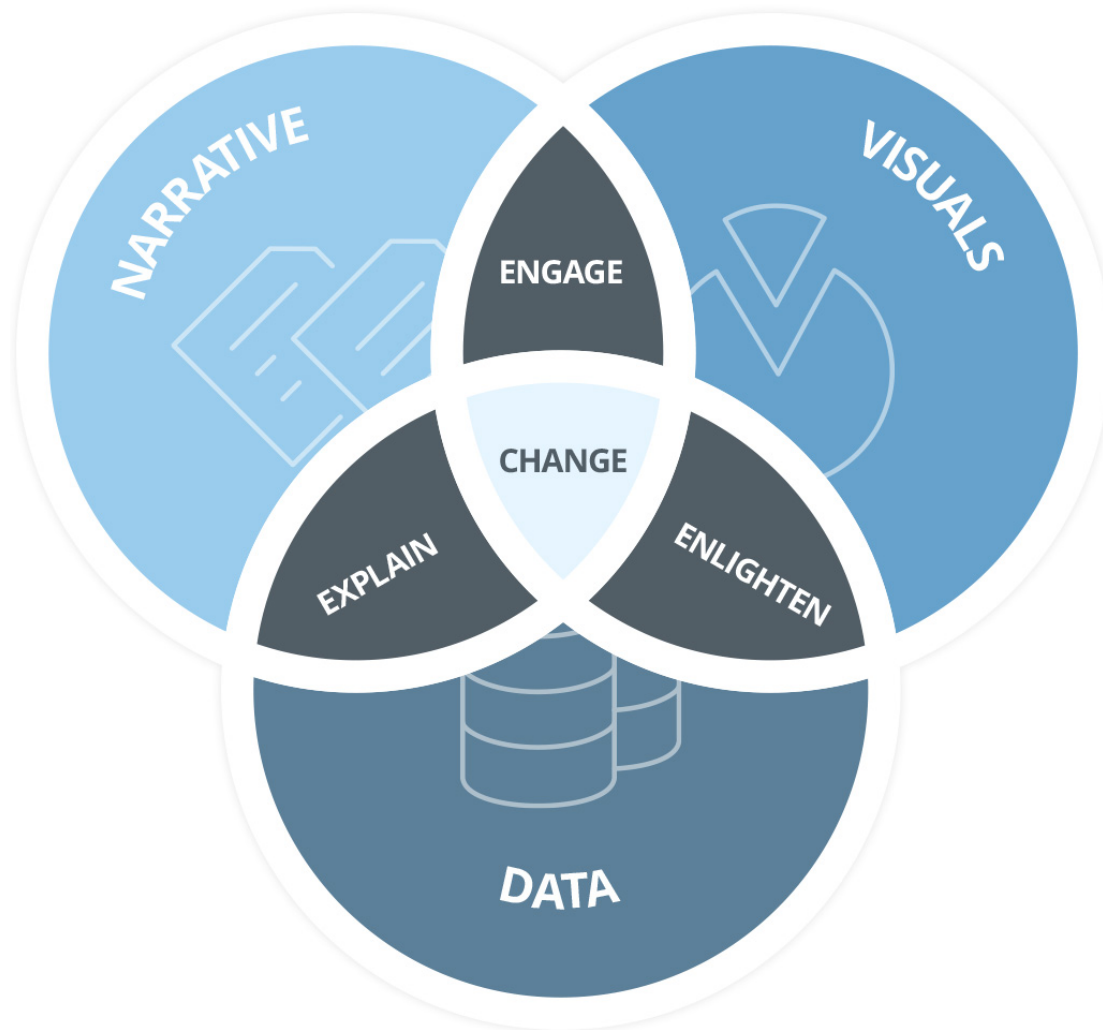
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Taking something great,

STAR WARS

and making it greater than one person can create on their own




Soft Skills have “***graduated***” to critical skills

Understand we are “***hard-wired***” for stories

Do “you”, be authentic to relate and connect

Understand you have to ***think differently*** to effectively communicate ***your*** science

A man with dark, curly hair, wearing a bright blue suit jacket over a white shirt and a dark tie, is singing into a microphone. He is on a stage with a red curtain in the background. A keyboard is visible to the left, and a cymbal is visible to the right. The lighting is dramatic, with red and blue hues.

**Gee, you know that
information...
really would've been more
useful to me yesterday.**



Jet Propulsion Laboratory
California Institute of Technology